

Abstract of the Disclosure:

The invention relates to a magnetoresistive semiconductor element, including a first contact and a second contact, and also a layer of a nonmagnetic semiconductor arranged between the first contact and the second contact. The first contact is composed of a semi-magnetic material. The semi-magnetic material is a strongly paramagnetic material whose electron spins have no preferential direction without an action of an external magnetic field. Under the action of an external magnetic field, the electrons are spin-polarized in the first contact. When a voltage is applied this results in the injection of spin-polarized electrons into the nonmagnetic semiconductor. As a result, in the nonmagnetic semiconductor, only one of the spin channels can be used for transporting the charge carriers, so that a positive magnetoresistive effect is obtained.

MPW/nt